

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for producing a peptide having three or more amino acid residues, comprising:

forming the peptide having three or more amino acid residues with an enzyme or enzyme-containing substance,

wherein the enzyme or enzyme-containing substrate has an ability to use as substrates an amine component having two or more amino acid residues and a carboxy component, to form a peptide having one more peptide bond than the amine component;

wherein said carboxy component is an amino acid ester or an amino acid amide;

wherein said amine component is selected from the group consisting of an unprotected peptide having two or more amino acid residues, a C-protected peptide having two or more amino acid residues, and a peptide having two or more amino acid residues and having a C-terminal amine in place of an amino acid;

wherein said enzyme-containing substrate comprises said enzyme.

2. – 5. (Canceled)

6. (Currently Amended) The method for producing a peptide according to claim 1, wherein ~~the~~ said enzyme is a protein ~~(C) or (D)~~ selected from the group consisting of:

~~(C)~~ a protein having an amino acid sequence consisting of amino acid residues numbers 21 to 619 of an amino acid sequence described in SEQ ID NO: 12, and

~~(D)~~ a protein having an amino acid sequence including substitution, deletion, insertion, and/or addition, ~~and/or inversion~~ of one or a plurality of amino acids in the amino acid sequence consisting of amino acid residues 21 to 619 of the amino acid sequence

described in SEQ ID NO: 12, and having activity to use as substrates an amine component having two or more amino acid residues and a carboxy component, to form a peptide having one more peptide bond than an amine component.

7. (Canceled)

8. (Currently Amended) The method for producing a peptide according to claim 1, wherein the said enzyme is a protein ~~(G) or (H)~~ selected from the group consisting of:

~~(G)~~ a protein having an amino acid sequence described in SEQ ID NO: 12, and

~~(H)~~ a protein containing a mature protein region, the protein having an amino acid sequence including substitution, deletion, insertion, and/or addition, ~~and/or inversion~~ of one or a plurality of amino acids in the amino acid sequence described in SEQ ID NO: 12, and having activity to use as substrates an amine component having two or more amino acid residues and a carboxy component, to form a peptide having one more peptide bond than the amine component.

9. (Currently Amended) The method for producing a peptide according to ~~claim 2~~ claim 1, wherein the microbe is a microbe belonging to the genus *Empedobacter* or belonging to the genus *Sphingobacterium*.

10. (Canceled)

11. (Currently Amended) The method for producing a peptide according to ~~claim 2~~ claim 1, wherein ~~the microbe is a microbe that has been transformed so as to be able to~~

~~express a protein encoded by a DNA (e) or (d)~~ said protein is a product of a microbe that has been transformed so as to express a protein encoded by a polynucleotide selected from the group consisting of:

(e) a ~~DNA that consists of bases numbers~~ polynucleotide consisting of nucleotides 121 to 1917 of the nucleotide sequence of ~~base sequence described in~~ SEQ ID NO: 11, and

(b) a DNA polynucleotide that hybridizes with a ~~DNA consisting of a base sequence~~ polynucleotide consisting of a nucleotide sequence complementary to the ~~base sequence~~ nucleotide sequence consisting of ~~bases numbers~~ nucleotides 121 to 1917 of the nucleotide sequence of ~~base sequence described in~~ SEQ ID NO: 11 under stringent conditions, and encodes a protein that has a peptide-forming activity,

wherein said stringent conditions comprises hybridizing at 60°C in a salt concentration corresponding to 1×SSC and 0.1% SDS.

12. (Canceled)

13. (Currently Amended) The method for producing a peptide according to ~~claim 2~~ claim 1, wherein ~~the microbe is a microbe that has been transformed so as to be able to~~ express a protein encoded by a DNA (g) or (h) said protein is a product of a microbe that has been transformed so as to express a protein encoded by a polynucleotide selected from the group consisting of:

(g) a ~~DNA that consists of bases numbers~~ polynucleotide consisting of nucleotides 61 to 1917 of the nucleotide sequence of ~~base sequence described in~~ SEQ ID NO: 11, and

(h) a DNA polynucleotide that hybridizes with a ~~DNA consisting of a base sequence~~ polynucleotide consisting of a nucleotide sequence complementary to the ~~base sequence~~

nucleotide sequence consisting of ~~bases numbers~~ nucleotides 61 to 1917 of the nucleotide sequence of ~~base sequence described in~~ SEQ ID NO: 11 under stringent conditions, and encodes a protein that has a peptide-forming activity,

wherein said stringent conditions comprises hybridizing at 60°C in a salt concentration corresponding to 1×SSC and 0.1% SDS.

14. (Currently Amended) The method for producing a peptide according to claim 1, wherein the carboxy component comprises ~~one type or two or more types~~ at least one amino acid ester selected from the group consisting of an L-alanine ester, a glycine ester, an L-threonine ester, an L-tyrosine ester and a D-alanine ester.

15. (New) The method for producing a peptide according to claim 6, wherein said enzyme is a protein having the amino acid sequence consisting of amino acid residues 21 to 619 of SEQ ID NO: 12.

16. (New) The method for producing a peptide according to claim 6, wherein said enzyme is a protein having an amino acid sequence including substitution, deletion, insertion, and/or addition of one to ten amino acids in the amino acid sequence consisting of amino acid residues 21 to 619 of SEQ ID NO: 12, and having activity to use as substrates an amine component having two or more amino acid residues and a carboxy component, to form a peptide having one more peptide bond than an amine component.

17. (New) The method for producing a peptide according to claim 8, wherein said enzyme is a protein having the amino acid sequence consisting of SEQ ID NO: 12.

18. (New) The method for producing a peptide according to claim 8, wherein said enzyme is a protein containing a mature protein region, the protein having an amino acid sequence including substitution, deletion, insertion, and/or addition of one to ten amino acids in the amino acid sequence of SEQ ID NO: 12, and having activity to use as substrates an amine component having two or more amino acid residues and a carboxy component, to form a peptide having one more peptide bond than the amine component.

19. (New) The method for producing a peptide according to claim 11, wherein said enzyme is a protein which is a product of a microbe that has been transformed so as to express a protein encoded by a polynucleotide consisting of nucleotides 121 to 1917 of the nucleotide sequence of SEQ ID NO: 11.

20. (New) The method for producing a peptide according to claim 11, wherein said enzyme is a protein which is a product of a microbe that has been transformed so as to express a protein encoded by a polynucleotide that hybridizes with a polynucleotide consisting of a nucleotide sequence that is complementary to the nucleotide sequence consisting of nucleotides 121 to 1917 of the nucleotide sequence of SEQ ID NO: 11 under stringent conditions, and said protein that has a peptide-forming activity,

wherein said stringent conditions comprises hybridizing at 60°C in a salt concentration corresponding to 1×SSC and 0.1% SDS.

21. (New) The method for producing a peptide according to claim 13, wherein said enzyme is a protein which is a product of a microbe that has been transformed so as to

express a protein encoded by a polynucleotide that consists of nucleotides 61 to 1917 of the nucleotide sequence of SEQ ID NO: 11.

22. (New) The method for producing a peptide according to claim 13, wherein said enzyme is a protein which is a product of a microbe that has been transformed so as to express a protein encoded by a polynucleotide that hybridizes with a polynucleotide consisting of a nucleotide sequence that is complementary to the nucleotide sequence consisting of nucleotides 61 to 1917 of the nucleotide sequence of SEQ ID NO: 11 under stringent conditions, and said protein contains a mature protein region having a peptide-forming activity,

wherein said stringent conditions comprises hybridizing at 60°C in a salt concentration corresponding to 1×SSC and 0.1% SDS.

SUPPORT FOR THE AMENDMENTS

Claim 4 was previously canceled.

Claims 2, 3, 5, 7, 10, and 12 are canceled herein.

Claims 1, 6, 8, 9, 11, 13, and 14 have been amended.

Claims 15-22 have been added.

Support for the amendment of Claims 1, 6, 8, 9, 11, 13, and 14 is provided original Claims 1, 2, 3, 4, 6, 8, 11, 13, and 14, and by the specification as filed at page 13, line 15 to page 15, line 13, page 27, lines 13-22, page 31, lines 5-8. New Claims 15-22 are also supported by original Claims 1, 2, 3, 4, 6, 8, 11, and 13.

No new matter has been added by the present amendment.